

Non-technical Abstract

HIV infection cripples a person's immune system, especially his T lymphocytes. This study will see if transferring healthy T lymphocytes which are immunologically matched with the patient will help the immune system of the HIV infected person. Lymphocytes from the blood of an HIV noninfected identical twin will be removed in a manner similar to blood donation. They will be grown in a tissue culture laboratory for 1 to 2 weeks. During this time they will be activated with OKT3 which is a monoclonal antibody and IL-2 which is a hormone of the immune system. They will also be separated into two populations: helper cells (CD4) and effector cells (CD8). They will also be treated with a modified retrovirus that contains a gene sequence that will uniquely identify the cells' DNA. This retrovirus is not like HIV, nor can it spread from cell to cell. It will not produce an infection. The purpose of the gene insertion with the retrovirus is to be able to find and identify the donor's cells after they have been infused into the HIV infected recipient. The gene transfer will not make the transfused lymphocytes more effective. After the cells are grown and treated they will be infused into the HIV infected twin. Each patient will have 3 treatments separated by 6 weeks. Periodically the HIV infected twin will have tests of his immune system to see if the transfused cells are helping. In addition, special tests (called PCR) will be done on the DNA from his blood lymphocytes to see if the transfused cells are still present in the circulation, to learn how long they will circulate, and to see if there is a difference in the survival of the helper and effector lymphocytes..